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George A. Bruns, D.M.D. George Trombetta, M.D.

Fellow Members of the American Society of Psychosomatic Dentistry and Medicine:

At our last national meeting in Washington, D.C., in March of this year, the attending members honored me by electing me to the presidency of our organization. I should like to take this opportunity to express our gratitude to our past president, Dr. George Bruns, under whose strong leadership we have made important advances. We are indeed fortunate that he will continue to contribute his ability and experience as a member of the Board of Directors. The other officers and board members are as listed in the Journal.

The meeting in Washington was a good one and the talk on personality types by Dr. Martin R. Protell of New York City, was very thorough and enlightening. In the afternoon, spirited and informative discussions were held at the round tables. This was a very successful meeting, and we sincerely hope that you will make it a **must** on your calendar next year. The time will be announced.

As you now know, the name of our organization was changed to The American Society of Psychosomatic Dentistry and Medicine, Inc. Some other by-law changes were made and will be published. Committees are being established to further hospital accreditation and recognition for men properly trained in hypnosis in medicine and dentistry. Furthermore, a strong effort will be made to organize active state sections of our Society. I am convinced that frequent local meetings are necessary to maintain efficiency and good application of hypnosis.

I would like to thank the membership for the confidence expressed in me by my election to this office. We have an enthusiastic group of officers and board members who are working actively to encourage and improve the proper use of Hypnosis in Medicine and Dentistry. We will keep you informed of local and national meetings and encourage you to attend. I am designating Dr. Philip Ament as my special adviser. We owe Dr. Ament a large vote of thanks for his apparent untiring efforts in our behalf. A training program for advanced training is being formulated by him. Details will be announced. You should all benefit by participation in this program.

My best personal regards to you all and I hope to meet more of you personally at future meetings.

Yours Sincerely,

George C. Trombetta, M.D., Pres.

Journal of the American Society of Psychosomatic Dentistry and Medicine

THE CONCEPT OF "HYPNOSIS"*

THEODORE XENOPHON BARBER [1]
Laboratory of Social Relations, Harvard University

A. INTRODUCTION

Discussions of hypnosis are still encumbered with static and mentalistic concepts. In a recent symposium (52), for example, various authors viewed hynosis as "trance," as a "state of dissociation," as an "unconscious level of awareness," and as a "preconscious" and "subconscious" state. Hypnosis will retain the status of an "unexplained" phenomenon as long as it is conceptualized in this manner. **Hypnosis is not a "state" of any kind.** Furthermore, it is not an example of "subconscious motivation" or "unconscious awareness," it is not a static entity called "trance" and it is not the result of "suggestion." The term "hypnosis" is a **descriptive abstraction** referring to a number of interrelated and overlapping processes.

For analytical purposes, I shall first discuss the processes of hypnosis as if they are fixed at a particular point in time and space, i.e., I shall analyze them as "factors" in the behavior of the "good" hypnotic subject. In a later section, I shall discuss the same processes with operator, i.e., "the hypnotist," as a frame of referrence. Finally, I shall indicate how we can begin to understand the "complex" phenomena of hypnosis—"anti-social" behavior, analgesia, psychosomatic alterations, "post-hypnotic suggestion," etc.—as functions of these processes.

B. THE HYPNOTIC PROCESSES

1 The Subject as the Frame of Referrence

The locus of hypnosis is not "in" the subject. Hypnosis is primarily a transactional process between the subject and the operator. To analyze this transactional process, however, we must choose some point of reference and we must subdivide it into separate processes. If we begin by taking **the subject** as the frame of reference we can tentatively separate this transactional process into three interrelated and overlapping processes:

(a). The process of becoming concerned only with the words of the operator and with those aspects of his self and his surroundings to which the operator specifically directs his (the subject's) attention.

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(b). The process of becoming ready and willing—becoming "set" —to carry out the instructions of the operator.

(c). The process of coming to believe that the operator has the "power" or "ability" to "make things happen" and the concomitant process of beginning to "literally think as the operator wants him to think" (1).

2. The Process of "Detachment"

Bernheim, Forel, Bramwell, and other early investigators noticed that the "good" subject[2] becomes concerned only with the words of the hypnotist and those aspects of his self and his surroundings to which the hypynotist directs his ettention. Recent investigators also note this relative "detachment." For example, Christenson states: "Unless th agent calls them to attention, a number of environmental stimuli seem to be shut off, for example, noises in general, and awareness of or reaction to the presence of other persons not involved in the process" (20, p. 39). Likewise, Arnold writes: "In hypnosis (as in sleep) sensitivity to outsde stimulation (apart from stimuli by the hypnotist) is decreased considerably" (1, p. 117).

The previously neglected "introspective" approach to hypnosis also indicates that the good hypnotic subject becomes concerned only with those aspects of his self and his surroundings to which the hypnotist directs his attention. For example, one week after completing a series of experiments (6, 7, 9) the writer telephoned all of the subjects who had participated and asked them "to state for a scientific journal as objectively and as scientifically as you can what the difference is between the way you feel when you are awake and when you are hypnotized." All of the somnambulistic subjects (and none of the "poor" subjects) stated, directly or indirectly, that when "hypnotized" they were less "concerned about things" and less aware of themselves and their surroundings. A typical comment by one such subject was: "The reason why hypnosis is so pleasant is because everything is nice and peaceful and I don't really think about anything unless the hypnotist tells me to think about something."

In fact, if there is any characteristic that good hypnotic subjects

[2]In this essay I am concerned only with the behavior of the "good" or "somnambulistic" hypnotic subject, i.e., the subject who experiences many or all of the classical hypnotic phenomena. The theories of White (75), Sarbin (69), and Arnold (1), are applicable to the behavior of the "poor" or "fair" subject who is "striving to behave like a hypnotized person" (White), who is "striving to take the role of the hypnotized person" (Sarbin), or who is "vividly imagining the situation as the hypnotist describes it" (Arnold). However, these theories do not explain what is most in need of explanation: the behavior of the "good" subject who undergoes surgery with hypnotic "analgesia," who "sees" the correct negative after-images of hallucinated colors, who experiences "age-regression," who carries out complex "post-hypnotic suggestions," etc.

have in common, it is this: long before they were formally "hypnotized," this type of behavior—becoming relatively detached and unconcerned about surrounding stimuli—was an integral part of their daily life. Young (76), for example, found that one or more of the following characteristics showed themselves in all of his best subjects **before** they were "hypnotized": "Deep abstraction, reverie amounting almost to ecstacy, putting oneself to sleep at will, actually hypnotizing one's self." Similarly, the writer found that the 10 somnambulistic subjects who participated in the experiments mentioned above (6, 7, 9) had been able since childhood to concentrate on their work or studies by "blocking out" environmental stimuli. With very rare exceptions, they could also go to sleep easily and quickly at any time—day or night. A typical comment was, "I can go to sleep in the middle of a conversation. If I'm interested in something I can concentrate even if someone is yelling. If I'm not interested, I usually fall asleep."[3]

This process of relative detachment from the environment (and the usually concomitant processes of decreased active "thinking" and increased muscular relaxation) is often conceptualized as a mysterious entity called "trance." There is no objection to using the term "trance" to describe this process if we remember that it is not an "entity" and that it is not "unusal." It is, in fact, a not too uncommon aspect of our daily life. An individual is reading a book when he suddenly realizes that he has no idea of what he has just been "reading." For a few moments he was "in trance"; he was not only unconcerned about the printed page, he was also not "thinking about anything" and attending to and not perceiving his surroundings. We also experience this process of relative non-response to stimulation, this passive, relaxed, non-thinking attitude, as we become drowsy and sleepy. Leuba was justified in concluding from his extensive study of the "trance" of the yogi, the mystic, the shaman, and the hypnotic subject that: "Were it not customary to use the word trance only when the state . . . is produced under unusual or abnormal conditions, ordinary drowsy states and normal sleep would be called trances" (53).

"Trance" and "Sleep." The reification of "sleep" into a "state" which we "go into" or "come out of" has stultified the investigations of this process and has left "sleep" a mysterious and unexplained

[3]Except for Sarbin's finding that "somnambulism" correlates very significantly with the hysteria scale on the **MMPI** (69, p. 265), there exist, to the best of my knowledge, no other studies besides my own and Young's which have attempted to determine, what if anything, characterizes the somnambulist. The reports in the literature on the relationship between "hypnotizability" and "personality traits" do not attempt to distinguish between somnambulistic and other hypnotic subjects. These studies find, in general, that the more friendly, sociable, cooperative individual tends to be a better subject than the introverted,, insecure individual (3).

phenomenon. "Sleep" is **not** a "state" which automatically "shuts off" our awareness of surrounding stimuli. "Sleep" is an **organismic process** that can be viewed from different frames of reference. If we focus on the perceptual functions of the organism, we conceptualize sleep as a process of decreasing attention to and perception of the environment. If we focus on the musculature of the organism, this process is termed "relaxation." If we focus on the cognitive functions of the organism, this process can be conceptualized as "decreasing symbolic manipulation of the environment." These are not separable processes but different ways of viewing the same process. The work of Horton (42), Jaobson (43, 44), Max (59), and Miller (62) converges on the conclusion that increasing muscular relaxation, decreasing thought processes, and decreasing attention-perception of stimulation are intimately interrelated and separable only for conceptual purposes. "Sleep" is not a "state" superimposed upon this process: "sleep"**is** this total organismic process.

As the writer has pointed out elsewhere (4), the concept of the "trance" refers basically to the same process as the concept of "sleep." However, the concept of "trance" is used when the process of decreasing attention to stimulation, decreasing thought processes, and increasing relaxation does not go as far as it does in "sleep" **because the subject attends to a very limited group of stimili.** The entranced yogi, for example, is concerned only with "stimuli that have a spiritual value" (14); the **sangiang** dancer of Bali is said to be "in trance" when she pays attention only to the music and remains unconcerned and detached from all other aspects of her environment (15, 11). Similarly, we say that the hypnotic subject is "in trance" when he is concerned only with the words of the hynotist and those aspects of his self and his surroundings to which the hypnotist specifically directs his attention. If the hynotist does not direct the subject's attention to this or that aspect of his self or his environment, the good hypnotic subject, like the "drowsy" and "sleepy" individual, remains relatively unconcerned about his surroundings, relaxed, and not actively thinking and analyzing. If the hypnotist directs the subject's attention to various aspects of his self and his surroundings, the good hypnotic subject attends only to those aspects and remains unconcerned about other stimulations.

A recent experiment also indicates that the process termed "trance" is **one** of the processes involved in hypnosis. In this experiment (2, 5) the writer approached 22 subjects in the middle of the night, when they were sleeping in their own rooms, and (without a preliminary "hypnotic induction procedure") gave them seven "tests of suggestibility," e.g., "your left arm is rising and coming up and up," "you are becoming very thirsty and you'll have to get up

in exactly five minutes and drink water," etc. In later experiments he gave these subjects the same seven "tests of suggestibility" when they were "awake" and after a "standard hypnotic induction procedure." He found that:

(a). When the subjects were "sleeping," i.e., when they were relatively "detached" from their surroundings, they were significantly more "suggestible," i.e., they were much more ready to experience the phenomena of hypnosis, than when they were awake.

(b). There was no significant difference in the subjects' responses to the "tests of suggestibility" when they were "asleep" and when they were"hypnotized."

It seems therefore that "trance" may be one variable involved in "hypnosis." That this is not the **only** variable is evident from the sequel to this experiment.

3. The Concept of "Set"

Although the subjects of the above experiment were "sleeping" when the writer approached them at night, they were nevertheless ready and willing—they were "set"—to carry out his instructions. He had previously asked their permission to give them "psychological tests" in the middle of the night when they were asleep; they had willingly agreed to be tested, and they were aware, to a greater or lesser extent, that he was going to test their "suggestibility." In a later experiment he ettempted, as far as possible, to exclude this factor of "set": he approached four other subjects in the middle of the night, when they were asleep in their own rooms, without previously obtaining their permission to do so. These subjects "woke up"; they did not respond to the "tests of suggestibility"; they were not "set" to obey his "suggestions." It seems, therefore, that the hypnotic subject does not remain relatively detached and unconcerned about his surroundings if he is not "set," i.e., if he is not ready and willing, to carry out the instructions of the operator.

An experiment by Eysenck and Rees (31) also indicates that both of these "variables" are involved in hypnosis. They found that drugs such as sodium amytal, which help the subject to become inattentive to his surroundings (21), are useful in the "induction of hypnosis" if the subject is already willing and ready to follow the instructions of the operator.

This factor of readiness and willingness, i.e., "set," has been emphasized in the recent theoretical formulations of White (75) and Sarbin (69). Sub-suming this factor under the more general concept of "motivation" they see the hypnotic subject as trying to play "the role of the hypnotized person" (Sarbin) or as "striving to behave like a hypnotized person as this is continuously defined by the op-

rator and understood by the subject" (White). These formulations, however, neglect the "end-result" of the hypnotic processes: the the subject accepts the hypnotist's words as true statements and he "perceives" himself and his surroundings as they are defined by the hypnotist.

4. Altering the Subject's Conceptions

"Motivation" and "relative detachment from the environment" are not sufficient conditions for "hypnosis." An individual who is motivated to carry out instructions and who is able and willing to maintain an attitude of relative "detachment" from his surroundings is not "deeply hypnotized" **unless he also beleives that the hypnotist's words are true statements.** In a previous communication (8) the writer presented evidence indicating that a somnabulistic subject quickly becomes a poor hypnotic subject when he is shown that he has complete control over the hypnotic situation[4] and when he realizes that the hypnotist does not have any special "power" or "ability" to make him believe anything he does not wish to believe or make him do anything he does not wish to do.

Investigators have not failed to note that the good subject accepts the hypnotist's words as valid statements. Erickson, for example, has noted this factor in many of his reports, i.e.: "Subsequent questioning of the subject under hypnosis discloses a persistence of an understanding of the total situation in full accord with the hypnotic suggestions and not in accord with the actual facts" (29, p. 200). The complex phenomena of hypnosis—age-regression, hallucinations, amnesia, psychosomatic alterations, etc.—have never been satisfactorily explained, however, because this factor has been relatively neglected in previous theoretical formulations.

5. The Hypnotic Processes from the Hypnotist's Frame of Reference

Before indicating how we can begin to understand the complex phenomena of hypnosis as functions of these interrelated processes and, more specifically, as functions of the "end-result" of these processes—the alteration in the subject's conception of himself and his surroundings—it would be profitable to analyze these processes with the hypnotist as our frame of reference.

From the subject's viewpoint "hypnosis" begins with the "formal induction procedure." From the operator's viewpoint "hypnosis" begins with the preliminary conversation which **precedes** this formal

[4]Ronald Shor of Brandeis University has pointed out to me that he had previously trained this subject to control, in autohypnosis, which suggestions he would respond to. I was not cognizant of this fact at the time of publication of the original article (8).

"induction." In this conversation the operator attempts to establish himself in the eyes of the subject as a person who is able to "hypnotize"; at the same time he attempts to "motivate" the subject by alleviating his fears and misconceptions and by describing hypnosis as something "good" "interesting" or "useful." [5]

Although there are many variations in hypnotic technique, the usual procedure is designed to help the subject become relatively unconcerned about internal and external stimulation by monotonously repeating the words "comfortable . . . relaxed . . .drowsy . . . sleepy . . . sounds are far away . . . nothing matters at all . . . etc." However, the operator may also bring the subject to the point of relative "detachment" from his self and his surroundings by focusing his attention on a very narrow range of stimulations, e.g.: "Notice the unusual sensations in your right arm. Think only of the sensations in that arm and of nothing else. Notice how the arm is becoming lighter and how it's beginning to rise and come up and up."

By including events in his induction procedure that take place as a normal reaction to the situation, the operator indirectly tries to convince the subject that "the hypnotist can make things happen" and "can make him do things that he would not ordinarily do." When the operator tells the subject to stare at a disc, or at a spot on the wall and then tells him, "Your eyes are becoming tired," the subject does not usually realize that his eyes are becoming tired as a normal reaction to the staring; he thinks the "hypnotist is making them tired." When the operator tells the subject, "You are becoming drowsy" (after subjecting him to the monotonous sound of his voice and the words "drowsy . . . so drowsy" for many minutes) the subject usually concludes that "the hypnotist is making him drowsy." Very few subjects are aware that becoming drowsy in this situation is a normal reaction to the prolonged monotonous stimulation.

The operator, therefore, attempts by his words, by the timing of his statements, and by his manipulation of the situation to guide the subject (a) to become relatively unconcerned about his surroundings, (b) to become "motivated" to carry out instructions, (c) to believe that "hypnosis" or the "hypnotist" can make him behave in unusual ways, and (d) to accept the hypnotist's words as true statements of what is happening and of what is going to happen.

The operator of course adjusts his procedure to "fit" the subject. In fact, some individuals—"trained" hypnotic subjects—do not require a lengthy "induction procedure"; they are already "set" to

[5]This is what Orne and Shor term the "structuring of the trance induction situation which is one of the major factors determining whether the subject will enter trance" (63, 71).

enter "trance," to carry out instructions, and to accept the hypnotist's words as valid statements.

Also, the relationship between the hypnotist and the subject (and between the subject and his surroundings) is constantly varying throughout the procedure. The subject is at times more and at times less aware of his self and his surroundings; he is more or less set to carry out the hypnotist's instructions; he is more or less ready to accept the hypnotist's words as true statements. Hypnosis is far from a static "entity"; hypnosis is the interrelated, overlapping, and continually varying processes which are separable into static "factors" only for analytic purposes.

C. THE PHENOMENA OF HYPNOSIS AS FUNCTIONS OF THE HYNOTIC PROCESSES

When these "factors" have all become operative, that is, (a) when the subject has become concerned only with the words of the operator and those aspects of his self and his surroundings to which the operator specifically directs his attention, and when, concomitantly, he has become more relaxed and not actively thinking and analyzing, and (b) when he has become "set," i.e., ready and willing, to carry out instructions, and (c) when he has come to believe that the operator has some special power or ability to make him behave in certain ways, or to make things happen in certain ways, the subject is ready to experience all of the hypnotic **phenomena—analgesia, hallucinations, amnesia, age-regression etc. —because he is ready to accept the operator's words as valid statements about himself and his surroundings and he is ready to "perceive" and conceive "reality" as the operator defines it.**

We can now begin to understand why "hypnosis" and the "phenomena of hypnosis" have always seemed mysterious. It is time to stop attempting to explain hynotic hallucinations, analgesia, etc., as functions of a "state of consciousness" or of an "altered state of the organism" and begin analyzing these phenomena in terms of the entire transactional process which we call "hypnosis." Let us begin by making a preliminary application of these principles to the problems of "anti-social" behavior in hypnosis, hypnotic alteration of sensory-perceptual functions, "psychosomatic" alterations, and "post"-hypnotic behavior.

1. Anti-Social Behavior

The issue of "anti-social" behavior in hypnosis can be reformulated from this perspective. The experimental evidence indicates that a "good" subject **will** perform what an objective observer views

as anti-social or dangerous acts—e.g., attempting to strangle an officer (72), throwing sulfuric or nitric acid at the experimenter (67, 77), stealing (18)—**if** the subject is first **"convinced"** that the behavior is normal and proper. (Watkin's (72) subject, for example, attempted to strangle his superior officer when he was led to believe that the officer was a Japanese spy.) Two recent extensive reviews of this problem have not failed to note that since the good subject accepts the hypnotist's words as true statements, an unscrupulous hypnotist can induce the subjet to commit "anti-social" acts. Young concludes that anti-social behavior can be induced during hypnosis if we "change one's perception of the situation, one's belief about himself and others" (77, p. 393). Weitzenhoffer concludes similarly: "If the subject is made to perceive his actions as not being anti-social, he most probably can be induced to perform anti-social acts" (73, p. 206).

2. Sensory-Perceptual Alterations

Hypnotic alterations of sensory-perceptual functions, e.g., hypnotic "deafness," "color-blindness," and "anesthesia," are enigmatic phenomena if the human organism is viewed as a machine-like object that **must** respond to a standard input—"the stimulus"—with a standard output—"the perception of the stimulus." This conception, however, overlooks not only the phenomena of hysteria but also the countless instances in daily life when individuals do not attend and do not perceive "stimuli impinging upon their sense receptors." This viewpoint also neglects the entire range of human behavior conceptualized as "sleep" when the individual selectively pays less and less attention to, and perceives less and less of, his surroundings. It seems that the "blindness," "deafness," and "anesthesia" of the classical hysterical, the "selective deafness" of the sleeping individual, and the "color-blindness" and "analgesia" of the hypnotic subject can be subsumed under one general principle: there is no **necessary** correlation between "stimulation" and "perception"; we do not perceive unless we first **attend** to the stimulating object.

Relatively few subjects experience hypnotic "color-blindness," "deafness," or "analgesia." To experience these phenomena the subject must not only be relatively inattentive to his surroundings and highly "motivated" to be a good hypnotic subject, he must also be **"convinced"** that he cannot possibly perceive these stimuli. For example, Erickson was able to induce hypnotic "deafness" in only six out of more than 100 trained hypnotic subjects (25, 26). After the "induction of a deep trance, followed by a deep hypnotic

stupor and succeeded in turn by a profound somnambulistic state,"[6] he attempted to convince these motivated subjects that they were totally deaf by a long series of emphatic statements that included "realization that deafness **could** be achieved . . .and that it was an **impending actuality** of the moment." When these six subjects were **"convinced"** that they were deaf, they did not "perceive" acoustic stimuli as indicated by (a) verbal report that "they could not hear," (b) loss of habitual responses to auditory stimuli, (c) absence of all startle reflexes, (d) inability to establish a new conditioned response to sound stimulus, and (e) loss of previously formed conditioned responses to sound stimuli.[7]

Hypnotic "Analgesia." A long series of reports leave no doubt that pain associated with a wide variety of conditions can be totally eradicated by hypnotic procedures. Some of the most recent reports, for example, include the use of hypnotically-induced analgesia to eradicate the severe pain of terminal cancer (19), amputation (68), fatal burns (22), bilateral mammaplasty (58), and Cesarean section and hysterectomy (48).

Hypnotic analgesia however is not an isolated phenomenon. Many other studies also contradict the assumption that the human organism **must** respond to a "noxious stimulus" with a "pain response." The writer suggests that an indirect approach to hypnotic analgesia will prove profitable: we should try to find the common denominator of the studies which indicate that there is no necessary relationship between "noxious stimulation" and the "perception of pain." For example:

1. A number of individuals who appear to be almost completely insensitive to pain have been studied by careful laboratory procedures (17, 34, 49, 56, 60). Although these individuals do not appear to have any neurological defects, they rarely give the usual behavioral and physiological responses to such noxious stimulations as fractured legs, bullet wounds, and teeth extractions. When they were subjected, in the laboratory, to such normally very painful proceures as (a) muscles ischemia, (b) esophageal distention, (c)

[6]The concepts of "hypnotic depth" and "stages of hypnosis" are ambiguous and misleading. Some investigators use these concepts to refer to the subject's relative detachment from his surroundings; others use them to refer to the subject's willingness to carry out instructions or to accept the operator's words as true statements about himself and his surroundings. A more basic objection to the use of these concepts, however, is that they imply that hypnosis is some kind of a static "entity" which we can go "deeper into" and from which we can "come out of."

[7]In another similiar experiment (27) Erickson carefully manipulated the situation to convince six highly motivated subjects that they were color-blind. His report indicates that when these subjects were "convinced" that they were color-blind, they responded to the Ishihara test as if they did not "perceive" the color-stimuli.

intravenus injection of 0.2 cc. of 1:1000 histamine phosphate, and (d) immersion of hands in ice water, there was an absence of normally expected physiological responses such as increased heart rate, blood pressure, and respiration (60), they disclaim discomfort, and they showed no wincing, sweating, withdrawal, or tremor (49). Ford and Wilkins (34) concluded from their study of three such individuals that: "These patients do not have . . . loss of any type of sensitivity . . . they are merely **indifferent to pain.**"

2. Patients have been relieved of severe and intractable pain of carcinoma, tabes dorsalis, causalgia, atypical facial neuralgia, etc., by prefrontal lobotomy (35, 32, 47). Although there is no necessary relationship between prefrontal lobotomy and altered behavior (39, 50), some studies indicate that the lobotomized patient is relieved of intractable pain when he becomes "indifferent" and does not "attend" to noxious stimulation (35; 37, p. 113; 38, p. 316; 45, 50, 61).

3. Other studies—e.g., "phantom limb pain" (30, 46), "natural childbirth" (65), mitigation of pain response after isolation (40), lack of pain response in severely wounded soldiers (12), relief of pain by placebos (13)—also indicate that when an individual does not "attend" to the noxious stimulation, the expected "pain response" decreases or disappears.

4. Studies which report a reduction or disappearance of response to noxious stimulation during "relaxation" (62, 44) are also related to the phenomenon of "hypnotic analgesia." (Clinical reports (23, 57, 64, 66) seem to agree that the hypnotic subject remains "relaxed" when he is "convinced" that his body—or body part—is insensitive to pain.)[8]

Livingston (54) summarizes these investigations as follows: "Pain is a perception, and as such is subject to the influence of associated ideas, apperceptions, and fears. The impulses which subserve it are not pain, but are merely a part of its underlying and alterable physical mechanisms."

An over-all view of these studies suggests that we can increase our understanding of "hypnotic analgesia"—and any other type of "non-organic analgesia"—by testing this hypothesis: the decrease or disappearance of response to noxious stimulation (during "hypnotic analgesia") is one aspect of a total organismic response which includes the subject's **"conviction"** that he is insensitive to pain and

[8]The psychogalvanic response to noxious stimulation often decreases or disappears during hypnotic analgesia (38, p. 283; 70, 74). Since the psychogalvanic response seems to be one aspect of a total organismic response to stimulation "interpreted" as "threatening" (36), its decrease or disappearance during hypnotic analgesia may indicate that the hypnotic subject does not "perceive" the noxious stimulus as "threatening" or pain-producing."

the concomitant and interrelated processes of decreasing attention to stimulation (including the noxious stimulation), decreasing symbolizations, and increasing muscular relaxation.

3. "Psychosomatic" Alterations

In another communication (10) the writer has summarized the evidence indicating that we can approach an understanding of the "psychosomatic alterations" which can be brought about by hypnotic processes—control of dysmenorrhea, reduction of warts, alterations in gastric secretions, etc.—if we hypothesize that the hypnotic subject is responding organismically to the stimulus-situation **as he himself** "perceives" it and **not as an objective observer "perceives"** it. (For example, a number of reports indicate that the bile secretions, and the quantity, acidity, and **specific** enzymatic content of the gastric secretions are the same when the subject **"believes"** he is eating a certain (hallucinated) food and when he really is eating this food (16, 24, 41, 51, 55.) We should investigate the limits of this hypothesis. Which individuals respond in this way? What is their reactional biography to the specific stimulus-situation? Which physiological functions can be influenced in ths manner?

4 "Post"-Hypnotic Behavior

The hypnotic processes do not necessarily terminate when the operator tells the subject to "wake up." The same factors operative in hypnotic behavior also operate in "post"-hypnotic behavior. In experiments reported elsewhere (7) the writer found that when somnambulistic subjects are told to "wake up," after they are given "post-hypnotic suggestions," they behave as follows:

(a). They open their eyes and become **relatively** more aware of their surroundings.

(b). They remain set to carry out any additional "suggestions" the hypnotist may give them throughout the entire "post"-hypnotic period—from the moment they are told to "wake up" until they are convinced that the experiment is over.[9]

(c). When the "post-hypnotic suggestion" is a "simple" one that is not incongruous with normal behavior, they carry it out with-

[9]Fisher concluded from an earlier experiment (33) that subjects follow "post-hypnotic suggestions" as long as they believe the experiment is still in progress. The writer confirmed this finding by the following experiment: he gave the subjects a series of "suggestions" such as, "You cannot move your left foot," "Your right arm is rising," etc., immediately after they "awakened," when they were carrying out the "post-hypnotic suggestions," and immediately after carrying out the "post-hypnotic suggestions." They obeyed these "suggestions" and they continued obeying additional "suggestions" until they were convinced that the "experiment was over." They became convinced that the experiment was over only when the writer completely redefined the interpersonal relationship, e.g., when he asked the subject to join him in the cafeteria for a cup of coffee.

out "going deeper into trance"—without becoming relatively more inattentive to and unconcerned about their selves and the surroundings. However, when the "post-hypnotic suggestion" is "complex" and incongruous with normal behavior, they are ready to go "deeper into trance" to carry it out properly.[10]

Whether the subjects are or are not "given amnesia" for the "post-hypnotic suggestions" is unimportant; "amnesic" and "non-amnesic" subjects carry out the "suggestions" in essentially the same way.[11]

The hypnotic process, therefore, does not necessarily terminate when the hypnotist tells the subject to "wake up." If the command to "wake up" is preceded by "post-hypnotic suggestions" the hypnotic process continues: the subject remains set to carry out the "post-hypnotic suggestions", to go "deeper into trance" if necessary, and to conceive himself and his surroundings as defined by the operator.[12]

D. CONCLUSION

Hypnosis is not a "state of consciousness." Hypnosis is not a "thing" or an "entity." Hypnosis is not something which "makes" a person behave in unusual ways. Hypnosis is a descriptive abstraction referring to an interpersonal relationship which is characterized by a number of overlapping processes. Taking the subject as our frame of reference these processes can be conceptualized

[10]Erickson concluded from an earlier study (28) that subjects "invariably develop a hypnotic trance" when carrying out a "post-hypnotic suggestion." To test the validity of this finding the writer gave the signal for the "post-hypnotic" behavior when the subject was speaking (more specifically, when he was in the middle of a sentence). If the subject stopped speaking in the middle of a sentence when he carried out the "post-hypnotic" behavior the writer concluded that he had become relatively unconcerned about his surroundings, i.e., he had gone "deeper in trance." When the "post-hypnotic suggestion" was to "scratch your head when I comb my hair," **the subjects continued speaking without the slightest pause or interruption** as the writer began combing his hair and as the subjects performed the scratching behavior. However, when the "post-hypnotic suggestion" was complex, e.g., "You will see a (hallucinatory) cat enter the room when I pick up a cigarette," **the subjects typically stopped speaking in the middle of a sentence** (when the writer picked up the cigarette), looked away for about 15 seconds, and then said, "Pardon me. What was I saying? I just noticed that you have a cat. I hadn't noticed it before."

[11]The only difference in the "post"-hypnotic behavior of these two groups of subjects is that those without "amnesia" usually state **why** they are going to carry out the "post-hypnotic suggestions," e.g., "I know this is a post-hypnotic suggestion but I guess I better carry it out. I'll feel uncomfortable if I don't do it."

The oft-repeated statement "The hypnotic subject is unconscious of why he carries out a post-hypnotic suggestion" is misleading. If the subject is **not** given "amnesia" for the hypnosis, he knows perfectly well why he is carrying out the "post"-hypnotic act. Only "amnesic" subjects, i.e., subjects who "believe" that they cannot remember, do not "know" why they carry out the (post-hypnotic) act.

[12]In forthcoming communications the writer will indicate how the principles developed in this paper can be applied to the phenomena of "hypnotic amnesia," age-regression," "negative and positive hypnotic hallucinations," and "hypnotic induction of multiple personality."

as follows: (a) the process of becoming concerned only with the words of the hypnotist specifically directs his attention, (b) the process of becoming ready and willing, i.e., "set," to carry out the instructions of the hypnotist, and (c) the process of coming to believe that the hypnotist's words are true statements.

When the subject is concerned only with the words of the hypnotist and when he literally belives that the hypnotist's words are true statements, he experiences many or all of the hypnotic phenomena. When "believes" that another person's purse is his own, he **responds** "anti-socially," i.e., he does not hesitate to "steal" the other person's purse: when he "believes" that he is insensitive to pain, he does not give the expected "pain" response to noxious stimuli; when he "believes" that he is color-blind, he **responds** to the Ishihara test as if he does not "perceive" color.

The psychology of hypnosis is therefore one aspect of the phychology of "belief" and "perception." The subject behaves in "unusual" ways only when the interacting and overlapping processes between the subject and the hypnotist are effective in altering the subject's "perceptions" and interpretations of himself and his surroundings.

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LABORATORY OF SOCIAL RELATIONS
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INTERPERSONAL FACTORS IN RAMPANT DENTAL CARIES*

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CHAPTER III

PERSONALITY STUDY IN TEN SAMPLE CASES**

CASE VIII

A 24-year old man came to the University of California Dental Clinic because he has more than the "usual amount of caries."

Diagnostic Data. The patient had 16 recent carious areas and a total of 58. His L. acidophilus index was 10,000. Diet analysis showed a high caloric intake. Fat was highly excessive. Protein was only slightly deficient. The intake of minerals and most of the vitamins was optimum. Grain and refined sugar products comprised 40% of the total calories.

History of Dental Caries and Present Complaint. Patient remembers that he went to a dentist before he was 6 years old. He believes that some of his deciduous teeth were decayed at that time. When about 10 or 11, he remembers more dentist visits. One tooth was extracted at that time under the presumption that it was a baby tooth, but it turned out to be one of his permanent teeth. He went to a dentist regularly and had always a number of teeth to be filled. He can not remember that there was any time of less rapid decay. The treatment always lasted a few months and not long after new fillings had to be made. He cannot say whether the tendency of his teeth to decay decreased of late, because he practically has not been able to have completed the necessary work on his teeth. He has had occasional toothaches, though he believes that these occur more in people who have less dental caries and who do not watch their teeth as carefully as he has.

Medical History. Patient had measles before he was 6, and whooping cough and chicken pox in grammar school. He has had no illness otherwise and did not have many colds during his high

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school and university years, though living in a climate which is conducive to colds.

Family History. Patient's father came to the United States from Russia when in his teens, probably for economic reasons. He had part of his education in the United States and was successful as a professional and businessman. He worked "ungodly hours" and his economic situation fluctuated with the boom and depression. There never was any poverty, though, and patient never noticed any deprivation. His father is a stubborn man who is inclined to carry his own load. He married at the age of 25.

Patient's mother came from Poland when also in her teens. He notes especially that she always got along with everybody in the family. She worries for everybody, apparently in an unselfish manner. She married at 20 and used to help in the father's business, so that patient was left a good deal to himself at an early age. Neither parent was strict with the children. Patient thinks much of his parents but states that everyone in his family thinks independently.

Patient has one older brother, seven years his senior, and an older sister. Patient himself was spoiled because he was the youngest, and he believes that his brother resented this fact. He remembers violent arguments with his brother at the age of 4. His parents took his part and spanked his brother. The relationship between the brothers still leaves quite a bit to be desired; there is no confidence between them and they never discuss any of their problems, a fact which patient states regretfully.

Patient's sister is his favorite. During his high school years there were "tremendous fights" between them, greatly disturbing the parents. But later on his sister came to be one of the only two persons which patient ever would call a friend. She studied and worked, but was dissatisfied with her life until her recent marriage.

Personal History. Patient believes that his birth was not dificult as otherwise his mother would have talked about it. He was breastfed for about two months and developed well. He walked before he was one year old and talked very early. He does not believe there were any feeding difficulties.

Patient states that he was a "precocious" and "intelligent child." He could recite poems at the age of two. His birth occured at an "opportune time as far as finances are concerned." He could recognize music records when he was very young, and he believes he was frequently shown off by his proud parents. He relates as his first memory, sitting on the running board of a car having his picture taken at the age of 2. He remembers a "remarkable thing"

at about three, that he visited his father at his store alone and actually arrived there, in the big city. He remembers vividly his first day of school at 5. He was frightened and did not want to go. He cried because he was away from his family and was satisfied only after he had been taken to another classroom. He probably did not like the people in the first.

As to his knowledge, patient presented no behavior problems such as thumb sucking or nailbiting. He once took money out of his mother's purse before he was six years old, but he was not punished for it. He had occasional nightmares as a child and woke up crying. He does not remember their nature.

Educational History. Patient got along satisfactorily in grammar school. He skipped several classes and remembers that a teacher came into the classroom to take him into the next higher grade. He states that at this time the age difference between himself and his classmates did not create any difficulties. He felt superior and used to order the other children around. When he started junior high school his grades became poor and stayed poor all through his high school years. He believes that he became lazy and that he considered school wark irrelevant. At the time the age difference of two years began to show; he felt confused and discouraged. He did some extra work in school in order to compensate for his bad grades. He cut school frequently, and as his mother was not at home and he came home early, this went unnoticed. Through his work in the school office, he could get around notes of excuse. He used to spend the day wandering around.

Patient graduated from high school at 15 and started college. During the first two years he changed his major frequently. He could not decide what he wanted to do, though he felt the urge to do something worthwhile. He was discontented and greatly bothered by the fact that he did not seem to know where his real talent lay. He wanted to do something vital, for his own self-satisfaction, and it was disturbing for a long time that nothing materialized. For want of knowing what else to do, he chose his father's profession. He graduated and took a job in which he was fairly content, but he is uncertain whether he would have stayed with it even had he not been inducted into the army half a year later. He was sent to college under the army program. He, himself, was surprised to learn that his IQ is 156. He does not believe that his new major is in the field in which he can make his greatest contribution and dreams of many other things which he would like to do. He is eager to be tested in order to have some assurance as to the best choice. In his many years of school, he has become "immune to school work" and does quite well without too much

effort. He could be the best student if he so desired, but does not think it worth the effort.

Social Adjustment. During his school years, patient was considerably left to himself, which he believes is the reason he became independent at an early age. He did not like to be with other people, would rather be left alone to shift for himself. He always felt above the crowd, tried to rule other boys, and as they would not stand for it, he preferred not to associate with them. Except for his sister, he has had only one friend in whom he could confide and with whom he would discuss his problems. He knows that his "bravado attitude" is annoying to people, but though this bothers him a good deal, he has no desire to change his habits.

Attitude toward Sex. Patient feels that he is spoiled in his relationship with girls. Whenever he was interested in a girl, she invariably "went for" him. He likes to be with girls, but is bothered by his fickle-mindedness and by his feeling that none is good enough for him for any length of time. He has the desire to settle down and marry,especially since he feels that he needs someone who might help him solve his problems.

Religious Attitude. In compliance with his parents' wishes, patient went to religious school. He is interested in religion because of the influence it has on other people, and likes to know about it. He himself does not feel any need for religion, nor is he influenced by it.

Emotional Adjustment. Patient is "bothered by many things" for which he blames mainly himself. He believes that it is laziness that he does not do anything to change them. He has the feeling that he is spoiled or that "he spoils himself." He dreams almost every night but is not able to tell the exact nature of these dreams. They are mostly pleasant dreams, might be "escape dreams" in which he does the things he would like to do.

Nutritional Habits. Patient likes to eat well and states that he has no special preferences. His father likes the Russian, strongly flavored food, and his likes are similar. He believes that he eats more proteins than carbohydrates. Because of irregular meals, he probably did not get the right kind of food in childhood, but believes that he ate a well balanced diet later.

CASE IX

A 47-year old man was referred to the University Dental Clinic by his dentist because of rampant caries.

Diagnostic Data. Patient had 74 recent carious areas, and

a total of 75. His L. acidophilus index was 25,000. Diet analysis was not available.

Present Complaint and History of Dental Caries. Patient states that his teeth "started to be bad last year." He had many decayed teeth than he used to have before, and about six months ago several teeth had to be pulled. He does not remember about his deciduous teeth, and never visited a dentist until he was 23 or 24 years old. Snce then one or two teeth had to be filled every two years. After 1930, he saw a dentist every six months without having much decay until about one or two years ago. According to patient's dentist, he was treate for paradentosis in 1937 and 1938 and had carious lesions and two extractions at that time. In 1939 he had 12 caries, a few in 1941 and 1942, more again in 1943 and 1945. The paradentosis became arrested.

Medical History. Patient was "not strong, but well" as a child. Since 14 or 15, he has had an eczema on his face and hands which clears up and returns intermittently. While his hands clear up completely, he still has periodically eczema on his face, which bothers him mostly because of his appearance, as it does not itch. He had colitis about for or five years ago, and has had trouble with his stomach since then, so that he has had to be careful with his diet. He believes that the X-ray showed "something" but he does not know what. Since about ten years ago, he has had paradentosis which is apparently arrested now, aslde from minor reinfections from the pockets.

Family History. Patient's parents lived in a small town on the coast of Holland where his father was a fisherman. He was drowned when patient was 11, and patient remembers only that he was a strong man who was not strict with his children. His mother is a "small person" but must have been strong as she worked hard all her life. Since the outbreak of the war, patient has not heard from her, but hopes she is still alive in Holland.

Patient is the eldest of six siblings, three brothers and two sisters, of whom the youngest was only 2 years old when the father died. The oldest girl was 8 and helped to take care of the other children. The brothers all worked as fishermen from their 12th year. His brothers were deported to Germany during the war; he hopes they have now returned. He believes that, where he lived, "everything is shot to pieces."

Personal History. Patient does not remember anything about his childhood. He went to day school until his 12th year when he started work as a fisherman. He regrets now that he did not have the chance for a better education, but did not feel the hard life

at the time. "Nobody tells you anything there." Besides his work, which sometimes kept him away for three months at a time, he took care of the house and cooked for the children when he was home. Patient remembers that at the outbreak of the first World War, when he was 16, he was at sea and did not hear about it until he came home. At 18 patient felt that the hard labor of a fisherman "did not agree with him," and he became a butler. In that occupation he had "good food." He traveled with his boss in Europe and to the United States, where he emigrated in 1931. He worked as a butler with different employers until after the outbreak of the second World War, when he started work in a shipyard.

Patient states that he would have liked to change since he came to the United States but that during the depression and after it, there was nothing else he could do. His work was too boring for him and he resented having to work long hours and being tied down constantly. He tells of an incident in a hotel in Germany that at 7 o'clock in the morning his boss was already impatiently awaiting him, so that he could not take his breakfast. He feels that he had a nerve-wracking job, in which he tried to please but never quite succeeded. While travelling he suffered from constipation frequently.

He is more satisfied with his work now in the shipyard. He does not have to rush all the time and is through with his work when he comes home. When he does not feel well, he can "take off," which was impossible before.

Social Adjustment. While patient's wife likes to be with people, he does not care for company and would rather stay alone. He has had one or two friends. He likes to read, enjoys occasional concerts or shows, but is tired at night and likes to go to bed early. He sleeps well.

Marital History. While working in an embassy, patient was too busy to marry and settle down. He would not have liked to have married in Holland as he does not appreciate the hard way of life there. His wife worked as a cook at the same embassy and came to the United States at the same time. They married in 1937. His wife worked with him for two years, after which time he decided that it was more appreciated when one person works. He tells of unpleasant experiences which precipitated their decision to have a home of their own. Patient bought a house in 1939, and his wife takes care of house and garden. As she cannot sit still, she goes out working, taking care of gardens, serving dinners, and sewing, as she is good at everything.

Emotional Adjustment. Patient states that he gets upset easily.

He remembers he used to get upset with his brothers when they did not do what he told them while he "could not be upset with his mother." While working as a butler, big parties upset him for two or three days. His tendency to be worried and excited did not stop after he changed his position. He feels that he is unduly worried when things are not in the right place. It upsets him when "people tell him what to do."

Patient states that he forgets about things after he has made up his mind. He used to smoke heavily, but stopped it completely without difficulty after his tonsils were removed. He started to eat more sweets since working in the shipyard—"his mouth gets dry"—but stopped this abruptly when his dentist so advised him. "If I know I have to stop, I just stop—what's the use?"

Patient dreams occasionally about his mother and father, sees himself talking to them. He does not grind his teeth.

Nutritional Habits. Patient can only take warm food as his stomach is upset if the food is too cold. He is "afraid to get sick" from it. He eats meats and cooked vegetables, can not stand fruits. He likes coffee, but does not take it because it doesn't agree with him. He takes milk warm. Beer upsets his stomach; he drinks whiskey with water. He never bothered about drinking whiskey though he always had access to the bottles while working as a butler.

CASE X

A 24-year old unmarried man presented himself at the University of California Dental Clinic because of rampant dental caries.

Diagnostic Data. Patient had 19 recent carious areas and a total of 57. L. acidophilus index was 1000. Diet analysis showed deficiencies in calories, protein, carbohydrate, and high excess fat. Calcium and phosphorus intake was optimum while the other minerals and most of the essential vitamins were deficient. Grain and refined sugar products comprised 16% of the total calories.

Present Complaint and History of Dental Caries. Patient had to have dental attention since he was five years old. While he attended a country grammar school, he had one or two decayed teeth every time a dental examination was given, which was twice a year. He lost his deciduous teeth by pulling them out himself. While in high school, he visited the dentist twice a year, and had three or four teeth filled each time. Since the age of 21 he has not had regular dental examinations, and when he visited a dentist after a two-year interval, 25 carious lesions were found.

Medical History. Patient was seven-month baby, and his birth occurred by Caesarian operation. He was not expected to live as he could not retain any food and could not sleep very long. Three months after his birth, he was sent home from the hospital because, according to the doctor's opinion, he was "pretty well gone." He was fed goat's milk which did not improve his condition. Only when a Spanish neighbor lady breastfed him was his life saved. He had the usual childhood diseases, whooping cough at 5, chicken pox at 12. He had few colds, which lately were due to the climatic change when he moved into foggy area. He had mumps at 21, complicated by orchitis. He was always very thin, has been unable to gain weight. From the age of 17 to 19 he was treated for hypothyroidism, but patient believes that the test was not entirely valid.

Family History. Patient's father came from an American family of English descent. He was raised on a farm as the youngest son of his father's second wife, a member of a large famliy. After graduating from college he settled on a farm, on doctor's advice, as he had just recovered from an attack of tuberculosis. When patient was 7, his father had had a recurrence of tuberculosis, which created a depressing home atmosphere. But patient believes that he had no concept of the implication of his father's illness at the time. Father has made a good recovery and is capable of managing his farm. According to patient, his father is an intelligent and capable man with a good disposition who does not worry and does not become angry easily. He was strict, but fair, and patient rebelled against restrictions unless he found them unjustified. Patient has always enjoyed the relationship with his father, with whom he can discuss his problems without impairing the independence of his decisions.

Patient's mother is American, of English and Swiss descent. She was fragile and weak at the time of her marriage. She is of a more nervous nature than his father, easily agitated if somebody is late for dinner or when patient would come in with dirty boots. Patient feels that the relationship to his father is closer, probably because he is a man. Mother taught school and went back to teaching after patient was old enough to go. She has been teaching until lately, always postponing from year to year her intention to discontinue her job.

When patient was 9 years old, a brother, then 4 years old, was adopted. He was an affectionate baby and a very sweet child and patient states that he was happy to have a brother, as he had been talking about it for a long time. There was never any "line of differentiation" between the two boys, and patient believes that

his brother received even more attention because of his adoption. The brothers went to school in different towns and had little contact with each other. Moreover, when his brother was only 14 years old patient left for the university. His brother's personality is entirely different from his own. He is sensitive to any advice, coming even from his parents. He loses his temper easily and resents patient's talking or writing to him in a brotherly manner.

Personal History. Patient was born one year after his parent's marriage. His birth endangered his mother's life. He probably had more than the usual attention as he was the first child of all his mother's family. After recovering from his initial illness he developed normally, was healthy and good natured, walked and talked at normal times. His parents told him he never cried and had a good disposition. During the first years of his life, the family good disposition. During the first years of his life, the family moved from a small town to the farm and back to a village, which moves were partly connected with big family decisions, as his father gave up his business to manage a farm.

His memories are of situations in sunny weather. He sees himself on the front porch at the age of 2, and people passing on the street. At three he ses his father and himself swinging in a hammock under a big fig tree. He is eating figs with the Spanish lady from across the street. One of his unpleasant memories is of a boy once knocking him over the head with a beam, rendering him almost unconscious.

Educational History. Patient's happiest time was in grammar school. The school was small enough so the children could retain their individuality. The population was heterogeneous, perhaps more so than in city schools, as there were many Portugese and poor farmer's children who were more reticent and looked up to patient and his like, so that they could rule the class. When he entered high school at 13 he did not like the change, as there he was one of the crowd, losing his leadership in studies as well as in his personal relationship. There were many new problems, adjustments to studying and organizing his time. He especially dreaded the bus ride home with some tough,"hard boiled kids who bullied him," which situation he was unable to meet. Things improved when he changed to another school in a neighboring town.

After graduating at 18, he entered college and found himself confronted with more worries and problems. It was his first separation from home, which was hard on him. He resented the subjection of freshmen in the fraternity as he does not like to see "anybody overbearing on anybody else." This situation improved when he became a member of the upper class. He changed his

major after the first year, rationalizing that he should follow his father's profession. After graduating, he found that the war and the decision on which service to join was another source of worry. He was offered schooling in another profession and had to persuade himself that he serves his country just as well by taking advantage of this.

Social Adjustment. Patient likes to be with people. His happy vacation memories at his grandmother's house are connected with playing with a little girl his age whom he met every year from his 5th to his 12th year. He connects the happy time of his grammar school days with the large playground in which he could play with other children and where he could lead them. He dislikes fights and is rather inclined to arbitrate. He has always had many friends though he is not certain how they think about him. He dislikes so much being alone that he gets uneasy and has to leave if he visits a movie alone. He believes that sharing with other people is the essence of happiness.

Patient is an active person who is uneasy when he has nothing to do. He always likes to do the best he can and is never satisfied with his achievements. He was "never the best piano player, never the best tennis player, never at the head of the school," which he would have liked to be "for his personal satisfaction." He does not find happiness in money. He probably likes somebody "patting him on the back," but mainly his ego needs the satisfaction of having done a good job, which he never really achieves.

Attitude toward Sex. In his relationship with girls, he has been bothered by his own attitude during the last three years. During his high school years he liked to go out with girls and especially one girl who came "pretty close to being his sister." Since he has been in college, the following episode has been repeating itself: He becomes fond of a girl and due to his affectionate nature he becomes more deeply involved than he wants to be. He wants to get away but he does not wish to hurt the girl. He has acquired a "phobia against becoming involved at all," and he is worried about not being able to fall in love. He is anxious to know what should be the criteria by which to decide on marriage.

Religious Attitude. Patient's grandmother was a minister's daughter who had attempted to force religion on his mother. She disagreed with this attitude and did not want to repeat this mistake on her own children. Both parents accept religion, not from the outside, but as a "moral code" and patient feels the same way about it.

Emotional Adjustment. Patient tends to worry "far more than he should." He has been trying to overcome this as long as he can remember,with, as he believes, some success. He thinks independently and likes to make his decisions accordingly. Patient dreams "all night long every night." They are mostly pleasant dreams in which he sees himself wandering in different environments with people he knows—quite ordinary situations. But strange incidents happen so that environment and people change suddenly and constantly. There is always beautiful sunshine. Patient hates the fog and the wind which have a depressing effect on him, just as the city itself gives him a feeling of claustrophobia. He forgets his dreams after waking. He sometimes talks in his sleep. His room mates tell him that he grinds his teeth in his sleep, which he does not do when awake.

Nutritional Habits. Patient had always the benefit of a wholesome farm diet. His mother studied nutrition in college and fed the men on the farm very adequately; even more so, her own family. He had cereals, milk, meat, vegetables, and fruit. During the last three years he had a great sugar intake, drinking coca-colas and indulging a craving for candy which he did not have before.

EDITOR'S NOTE: - Analysis of these interpretations will follow in the next issue.

book review

CLINICAL APPLICATIONS OF HYPNOSIS IN DENTISTRY

by S. Irwin Shaw, D.M.D., M.Ed.

This timely concise presentation of the clinical applications of hypnosis in dentistry should prove to be a much needed supplement to the few good textbooks pertaining specifically to the dental use of hypnosis. Dr. Shaw, a practicing dentist, is to be congratulated for his contribution in this area having designed a book for every-day use to serve as a quick reference for specific applications of suggestion and hypnosis. This handy book will save the busy dentist interested in hypnosis many hours of assimilating the authentic and practical material which has been written on this subject. It offers the beginner a rich assortment of hypnotic techniques along with their limitations and adequately supplements them with the step-by-step clinical procedure, illustrations and actual case histories. In a special section devoted to the dynamics of human behavior, the author enlightens the reader in fundamental concepts in an easy to understand, precise way. The person using hypnosis cannot fail to improve his percentage of successful hypnotic results and therapeutic goals when he relates his choice of technique within the framework of individual behavior and motivation. This book is intended for use, and for that reason, emphasis has been placed on clinical. material. The information contained herein is up-to-date and reliable, being based on the author's extensive clinical and teaching experience along with that of other experts in the field. This fine book will undoubtedly assist the teacher of hypnosis as a supplement to the didactic portion of a course of training in clinical use of hypnosis in dentisty, and will serve as a primer for further study.

Unhesitatingly, I would recommend this book for the library of everyone interested in the study of suggestion and hypnosis. Whether he uses hypnosis or not the dentist will be better able to answer patient inquiries about hypnosis in an intelligent and authoritative manner.

Arthur Kuhner, D.D.S.

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